

REMARKS

Claims 17-22 and 24-30 are all the claims pending in the application. Support for amendment to claim 17 may be found in the specification as originally filed, for example, in original claim 23 and at page 8, last line, and page 11, lines 9-19.

Support for new claim 27 and 28 may be found in the specification as originally filed, for example, at page 8, lines 33-37. Support for new claim 29 may be found in the specification as originally filed, for example, at page 11, lines 18-19. Support for new claim 30 may be found in the specification as originally filed, for example, at page 1, line 14.

I. The Rejection under 35 U.S.C. § 112, second paragraph

Claims 22-24 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the Examiner states that Claim 22 recites “said surface active agent,” and that claim 18 recites two surface active agents, and alleges that it is unclear as to which surface active agent is referenced in claim 22.

Applicants have amended claim 22 to recite that the surface active agent of the ink permeation member is a denatured sodium succinate

For the above reasons, it is respectfully submitted that Applicants’ claims are clear and definite and it is requested that the rejection under 35 U.S.C. §112 be reconsidered and withdrawn.

II. The Rejections under 35 U.S.C. § 103(a)

Claims 17-21 and 25-26 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 5,182,579 to Haruta et al (“Haruta”) in view of U.S. Patent No. 5,477,963 to Mochizuki et al (“Mochizuki”).

Claims 22-24 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Haruta in view of Mochizuki further in view of JP ‘466 (“Konica”).

The Examiner asserts that Haruta teaches an ink storing absorbent material for an ink jet made with a flexible polyurethane foam. The foam is the reaction product of a polyol, an isocyanate, a catalyst, and a blowing agent (see col. 1 lines 54-61). The Examiner notes that although Haruta teaches an ink permeable absorbing member, Haruta does not teach the presence of a second contacting foam having a specific compression magnification. The Examiner asserts, however, that it would have been obvious to one of ordinary skill in the art to adopt the second contacting foam based on the teachings of Mochizuki.

Applicants respectfully submit that the present invention is not anticipated by or obvious over the disclosures of Haruta in view of Mochizuki et al or Haruta in view of Mochizuki et al and JP ‘466 (Konica) and request that the Examiner reconsider and withdraw these rejections in view of the following remarks.

The ink supporter of the present invention exhibits a feature of being capable of readily absorbing and supporting ink, particularly, pigment ink. To be more specific, if the ink permeation member provided at a portion corresponding to a printer head is formed of an absorbing member having a good ink absorptivity due to the capillary phenomenon, which is obtained by hot-pressing a flexible polyurethane foam, such an ink permeation member may be

clogged with particles of, for example, carbon as a pigment component. This results in the absorbing ability being significantly degraded. Accordingly, ink permeation members need the ability of readily absorbing and supporting pigment ink, and also ink permeation members must be lower in capillary effect, than the ink absorbing member as a main body, for preventing the occurrence of clogging of ink upon drying (when the member is not in use) which leads to a failure in absorption. For this reason, according to present invention, the flexible polyurethane foam for forming the ink permeation member is impregnated with a surface active agent in the claimed amounts for improving the absorptivity for pigment ink.

Further, the ink absorbing member is thermally compressed at a compression magnification of 5 to 20 times, to thereby ensure a good ink absorptivity as well as a good ink supporting ability.

Haruta discloses an ink absorbent member for storing an ink made with a flexible polyurethane foam which is produced by reacting a polyol with an isocyanate by employing a blowing aid, a catalyst, a foam stabilizer, a coloring matter, and other additives for the foam, and subsequently heating it. In column 35, line 2 of Haruta, a surfactant is described as an additive.

However, Haruta does not disclose or teach that flexible polyurethane foam is impregnated with a surface active agent in a range of 1 to 500,000 g per 1 m³ of said polyurethane foam. The added amount of the surface active and its effects are not taught or disclosed in Haruta. Haruta is also silent on the requirement of the ink permeation member (underlined above).

In addition, Haruta does not disclose or teach that the ink absorbing member is thermally compressed at a compression magnification of 5 to 20 times. With respect to the compressed flexible polyurethane foam, as the compression magnification becomes larger, the capillary effect becomes larger, but the density becomes high and thereby the ink supporting ability decreases. Accordingly, in practical use of the polyurethane foam, it is important to select the specific compression magnification. For example, an ink absorbing member in contact with an ink permeation member is required to have higher capillary effect (that is, ink suction rate and ink suction height) than the ink permeation member. Further the ink absorbing member is required to have a sufficient ink absorbing capacity and to prevent occurrence of clogging of ink and failure in absorption. In consideration of these conditions, the compression magnification of the polyurethane foam used for the ink absorbing member must be selected.

Haruta is silent on above-described matter. Haruta also does not disclose or teach the ink absorbing member being in contact with the ink permeation member which is thermally compressed at a compression magnification of 5 to 20 times.

Mochizuki does not disclose or suggest that the compression magnification of flexible polyurethane foam is 5 or more times. Also, Mochizuki and Haruta and JP '466 (Konica) do not disclose or suggest the present invention having the combination of consisting of the ink permeation member and the ink absorbing member which have the features respectively as described above.

For the above reasons, it is respectfully submitted that the subject matter of claims 1-22 and 24-30 is neither taught by nor made obvious from the disclosures of Haruta in view of

Mochizuki et al or Haruta in view of Mochizuki et al and JP '466 (Konica) and it is requested that the rejections under 35 U.S.C. §103(a) be reconsidered and withdrawn.

III. Conclusion

In view of the above, Applicants respectfully submit that their claimed invention is allowable and ask that the rejection under 35 U.S.C. §112 and the rejections under 35 U.S.C. §103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

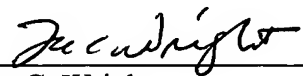
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Date: September 15, 2005



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